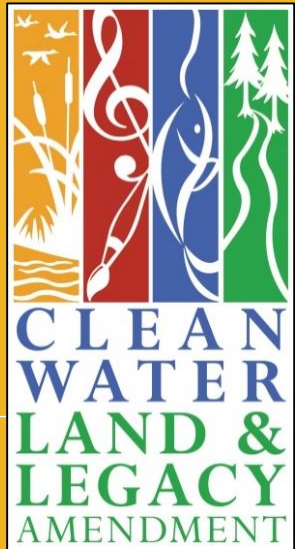




Minnesota Golden-winged Warbler Public Lands Program



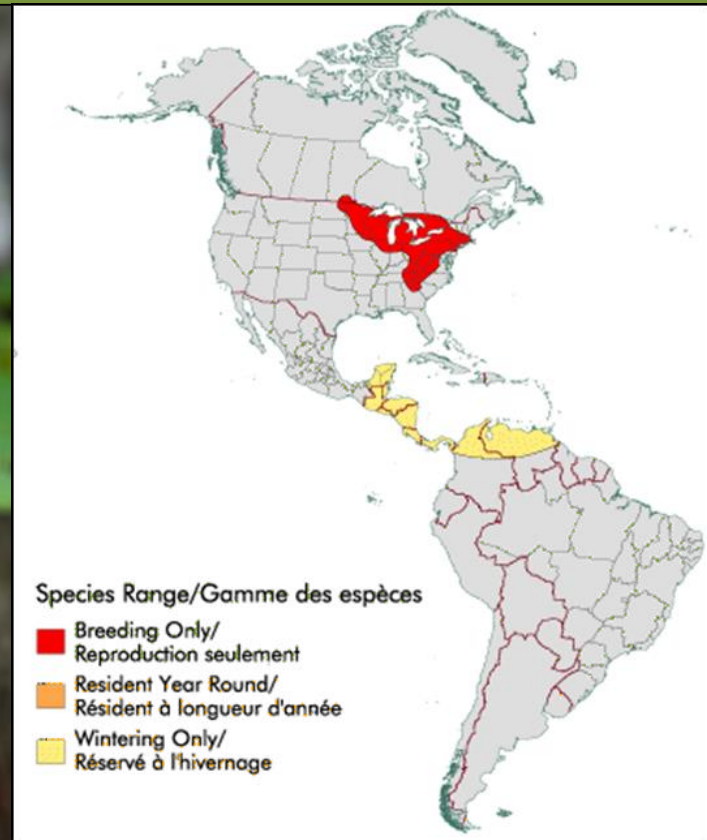
Presented By: Peter Dieser

- ❖ Made possible with funding through the Minnesota Outdoor Heritage Fund



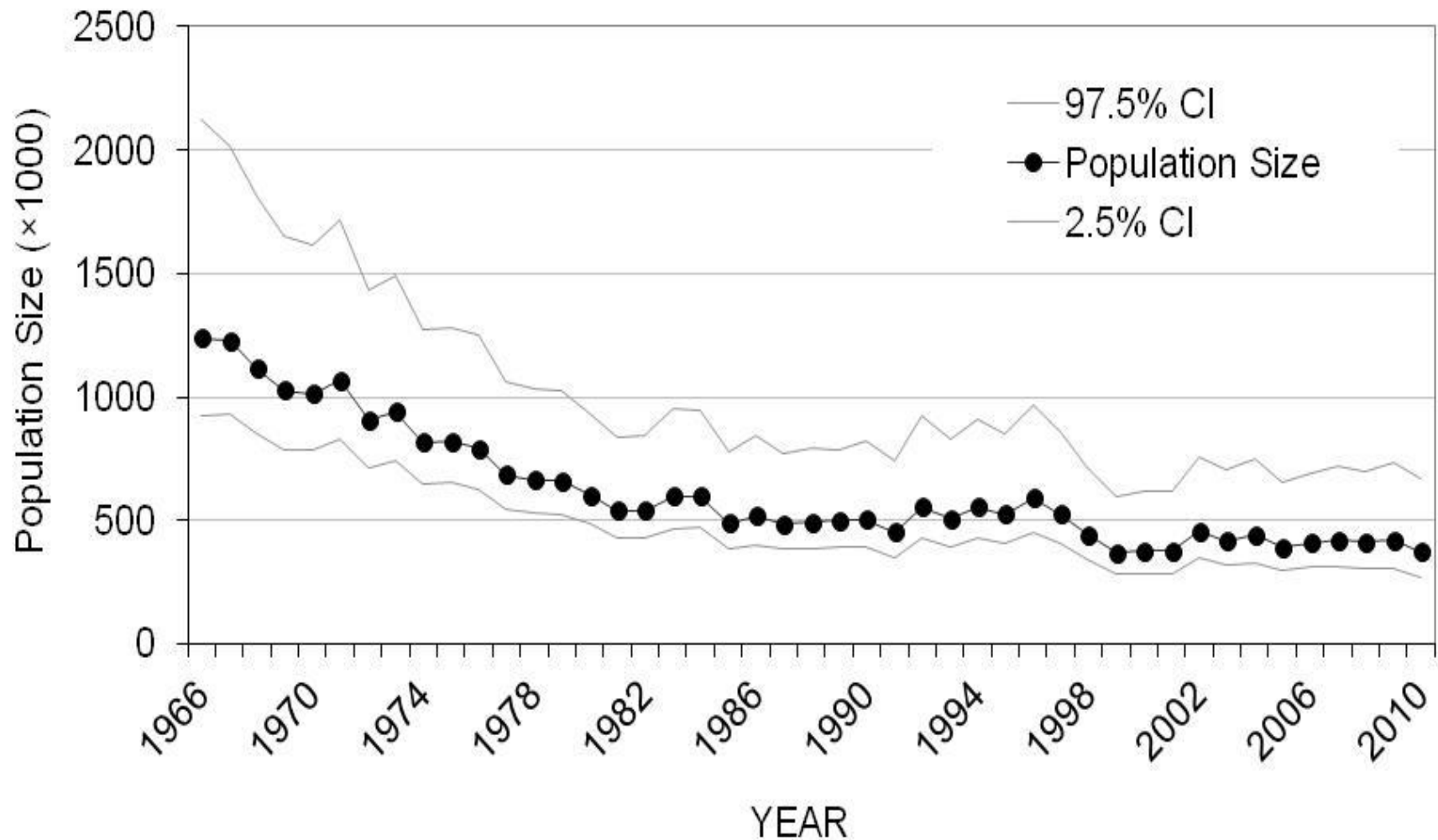
Golden-winged Warbler

- Neotropical Migrant (MN Resident during May-Aug. -> 47%)
- Ground Nester
- Males use canopy trees for song perches and to forage
- Foliage Gleaner - Forages in all vegetation layers (shrub, sapling and tree)
- Territories almost always incorporate a mature forest edge



Golden-winged Warbler Population Trend

(North American Breeding Bird Survey)



-2.6% /year (95% CI: -3.5, -1.6)

American Woodcock



Fig. 1. Woodcock management regions, breeding range, and Singing-ground Survey coverage.



American Woodcock Singing Ground Survey Indices

American Woodcock Population Status, 2019

U.S. Fish and Wildlife Service

Division of Migratory Bird Management

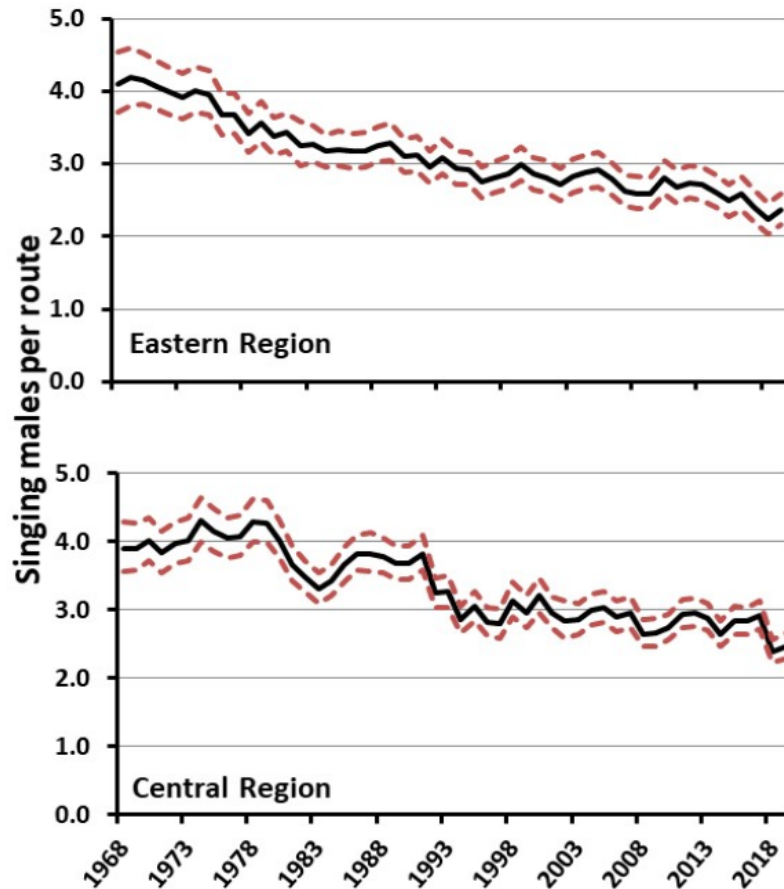
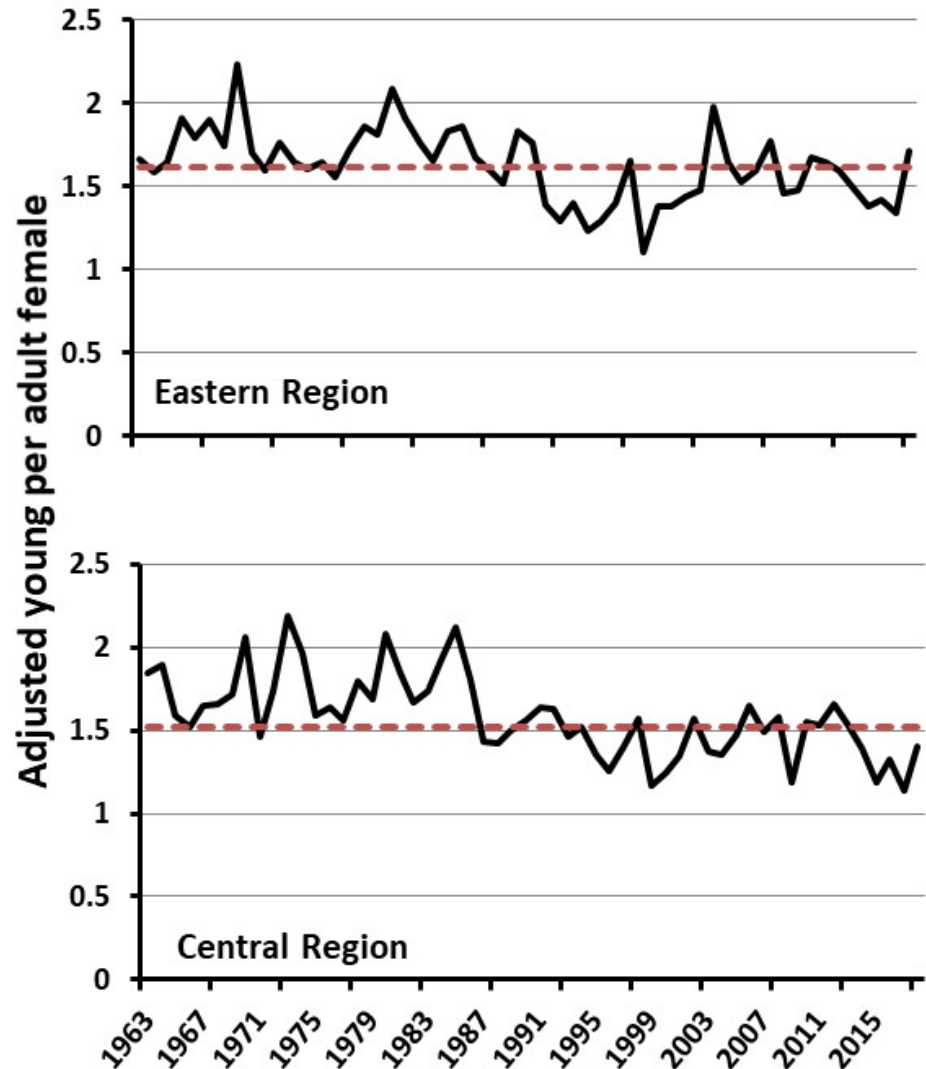
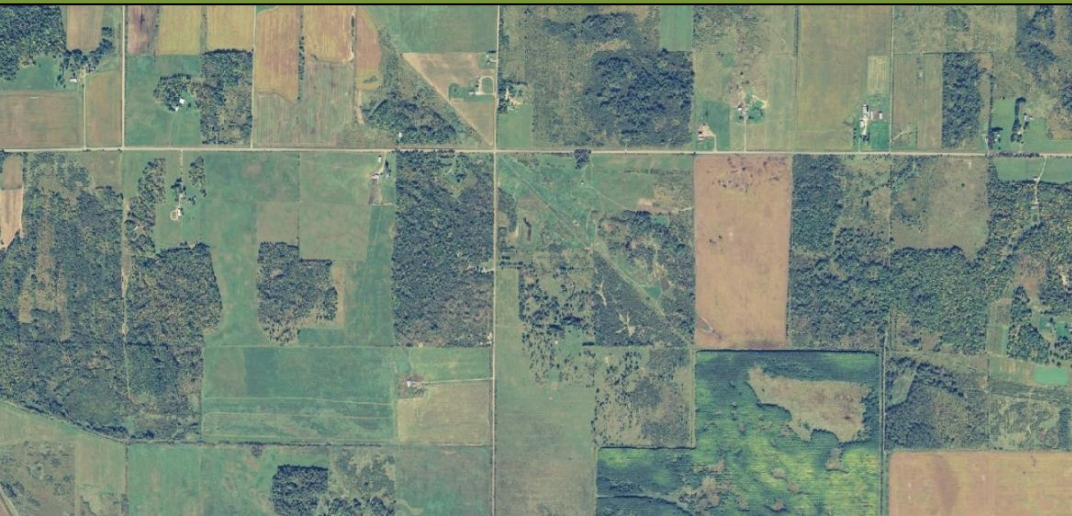


Fig. 4. Annual indices of the number of woodcock heard during the Singing-ground Survey, 1968–2019 as estimated using hierarchical modeling. The red dashed lines represent the 95% credible interval for the estimate.



Primary Reasons for Decline

- Loss of Breeding Habitat
 - Req. contiguous forest and site/landscape level diversity
- Loss of Stopover Cover
- Loss of Winter Cover
- Human Development (habitat fragmentation)
- Lesser Factors: Nest Parasitism, Hybridization

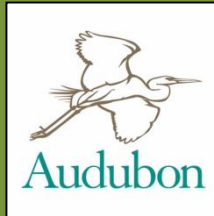


Golden-winged Warbler BMPs

BEST MANAGEMENT PRACTICES FOR
**Golden-winged Warbler Habitats in
the Great Lakes Region**
A Guide for Land Managers and Landowners



GWWA Best Management Practices (BMPS) were created by the Cornell Lab of Ornithology in 2013 and updated in 2019 under the guidance of the GWWA Working Group and with the assistance of by a consortium of more than 140 biologists and managers engaged in GWWA research and conservation.



How is Habitat Created?

- Natural Disturbance: Promote or emulate natural disturbance regimes (fire, beaver activity, and flooding) that create early successional forest/brushland habitat. This is especially relevant in noncommercial areas where active management is difficult due to limited funding.



- Natural disturbances pictured here: Understory Fire, Blowdown, Insect/Disease, Beaver Flowage

How is Habitat Created?



Mechanical Brush Treatment – ABC's Focus on MN Public Lands



Timber Management



Prescribed Burning



Reclaim and Restore Degraded Sites

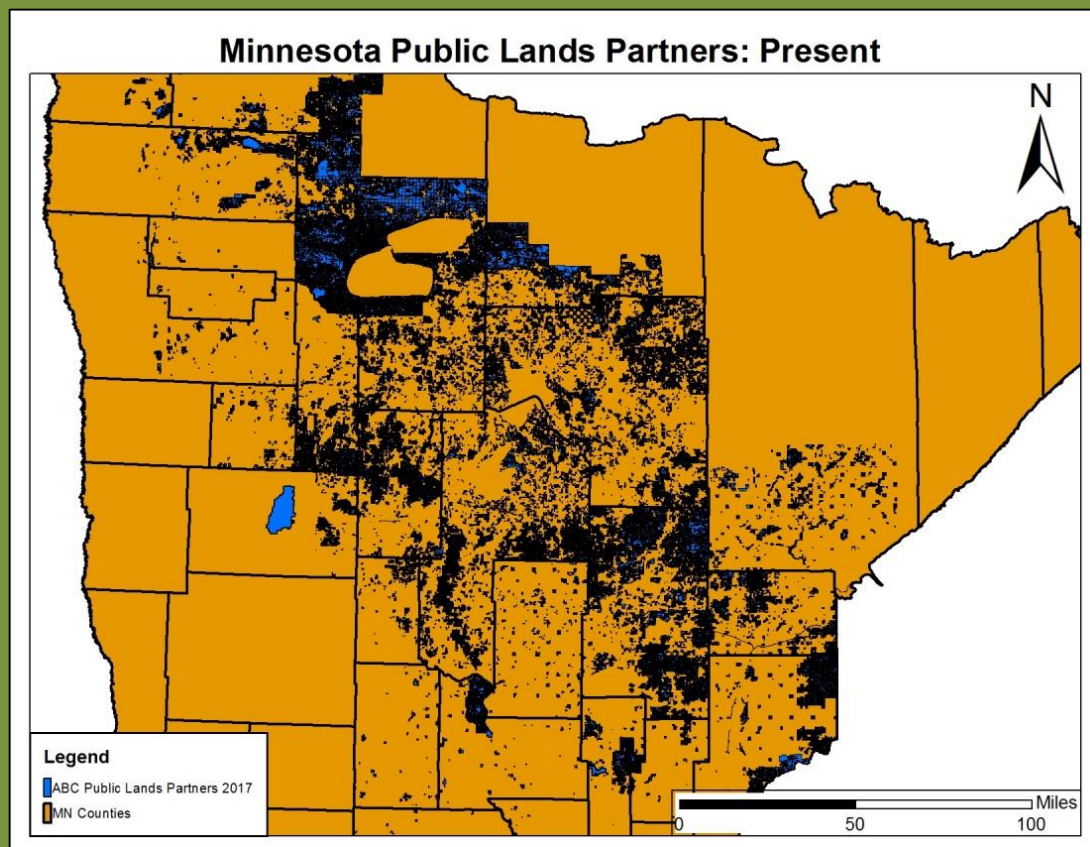


Accomplishments to Date

Minnesota Public Lands Partners:

- 12 Minnesota DNR Area Wildlife Offices
- 7 Minnesota County Land Departments
- 2 USFWS National Wildlife Refuges
- 2 USFS National Forests
- The Red Lake Band of Chippewa

❖ Projects have been completed in 13 counties



* Includes MN OHF Young Forest Conservation Phases I-III

Accomplishments to Date

Minnesota Public Lands:

- MN OHF Phase I Completed Project Acres: 2,581
- MN OHF Phase II Completed Project Acres: 4,474
- Phase III Target Acres: +3,650

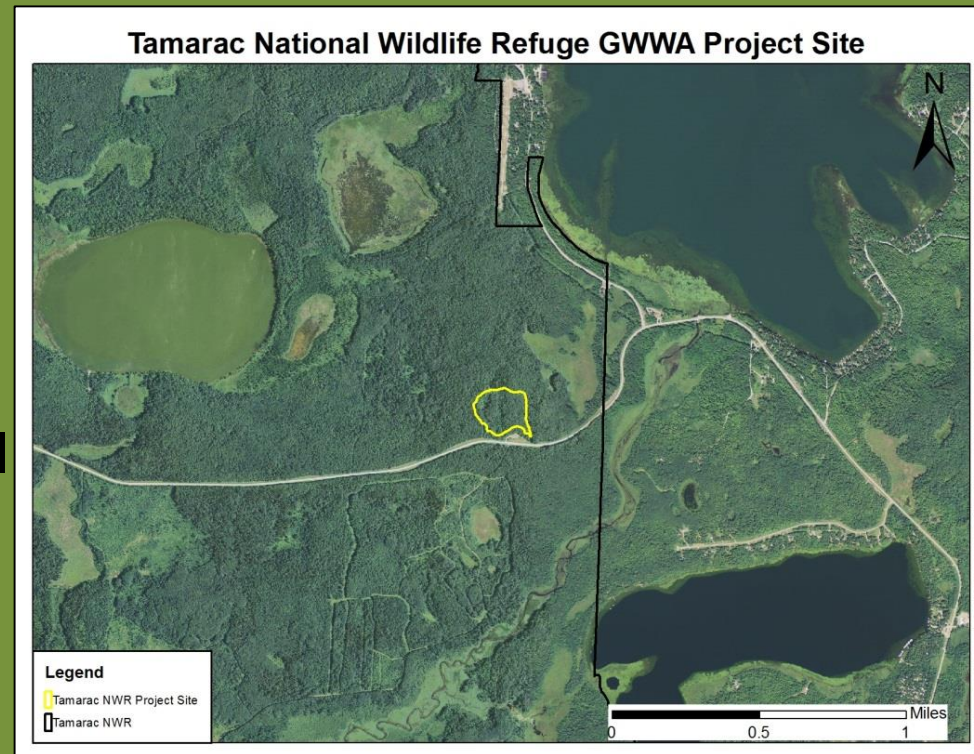
Minnesota Private Lands:

- Completed Project Acres via NRCS RCPP Phase I: 2,934
- RCPP Phase II has been approved through

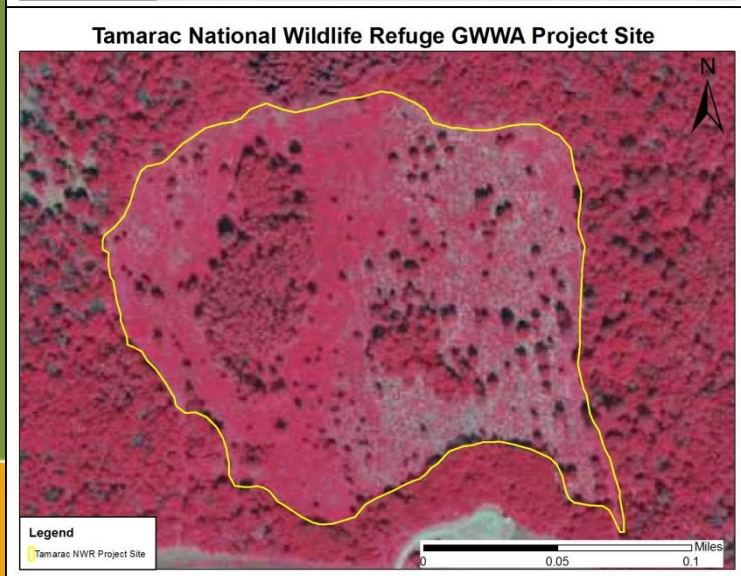


Landscape-level Requirements: Identifying Suitable Project Sites

- $\geq 50\%$ forest cover within 1.5mi of restoration or harvest site
- Deciduous or mixed forest cover types
- Conifer component $<$ approx. 30%
- Mix of mature and early successional deciduous forest ages
- Created habitat is ≤ 1 mile from other early successional patches



Project Site Requirements: Creating Young Forest Habitat



- Adjacent Mature Forest
- Deciduous or Mixed Deciduous Overstory
- Post Treatment (Brushland):
 - 25-50% shrub/sapling cover unevenly distributed as clumps (depends on site-lvl features and number of mature trees present)
 - Well distributed leave trees or patch creation
- Post Treatment (Forest):
 - Optimal target is 10-15 trees per acre (Dom/CoDom) – DBH > 9"
 - Well distributed leave trees and/or patch creation
- Include Legacy Patches and Feathered Edges When Possible

* Sites are occupied for 10-12 years post treatment













Avian Surveys 2015-18

Within each restored habitat:

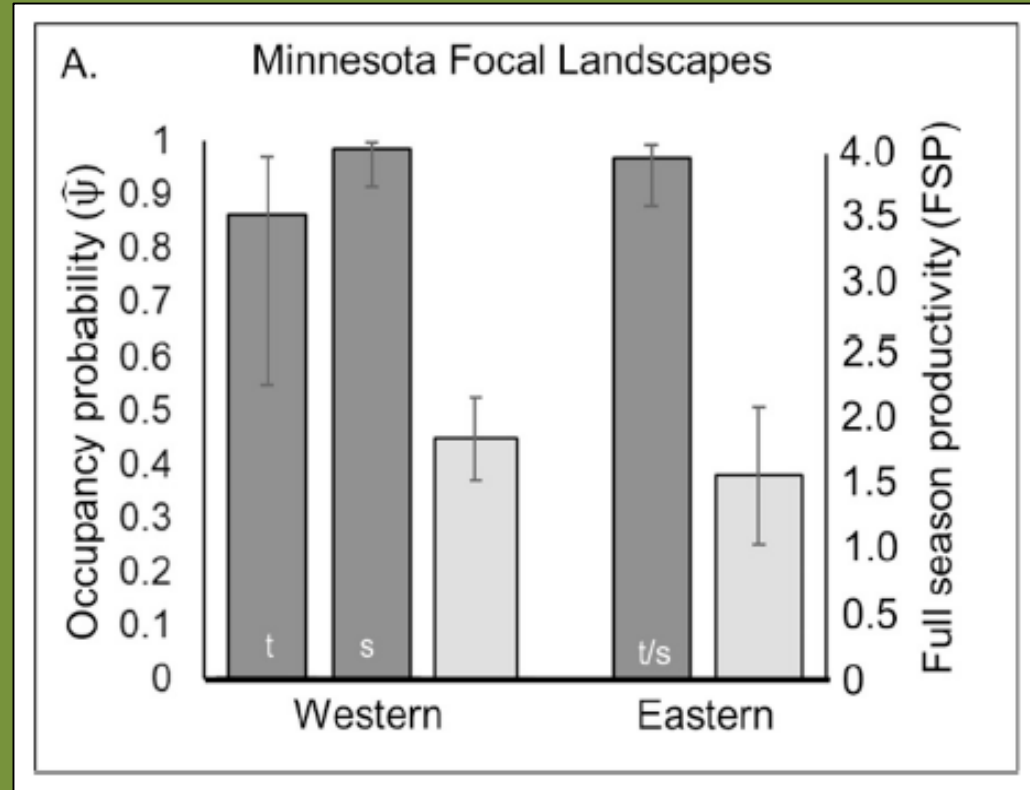
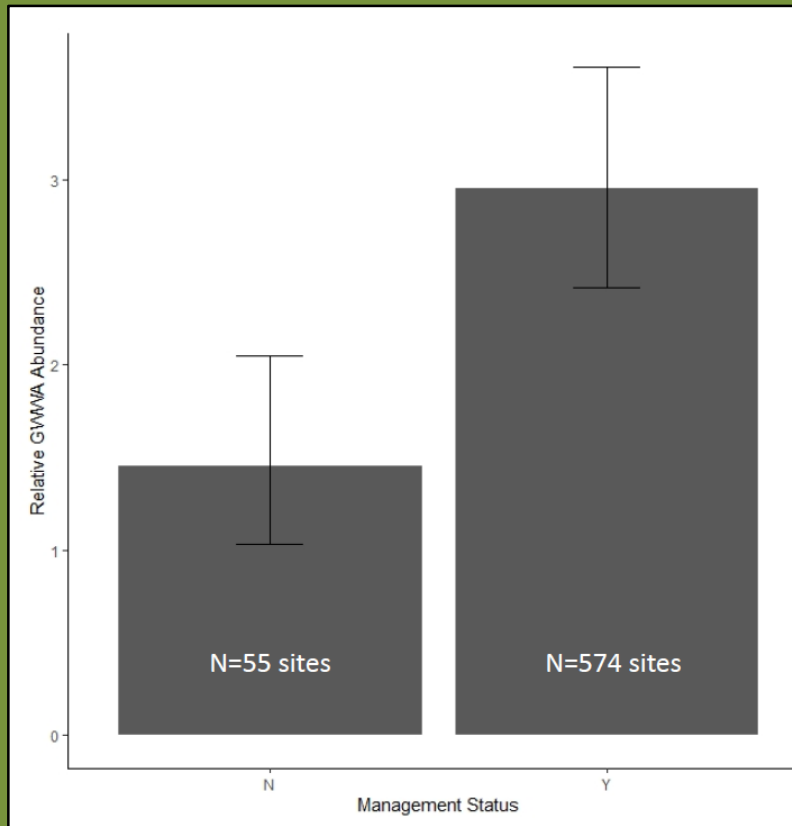
- Randomly-placed survey locations
- > 80 m from edge
- ≥ 250 m apart

At each point:

- Point count surveys
 - Single-observer
 - 10 minutes in length
 - Recorded distance to observer
 - Surveyed twice/year

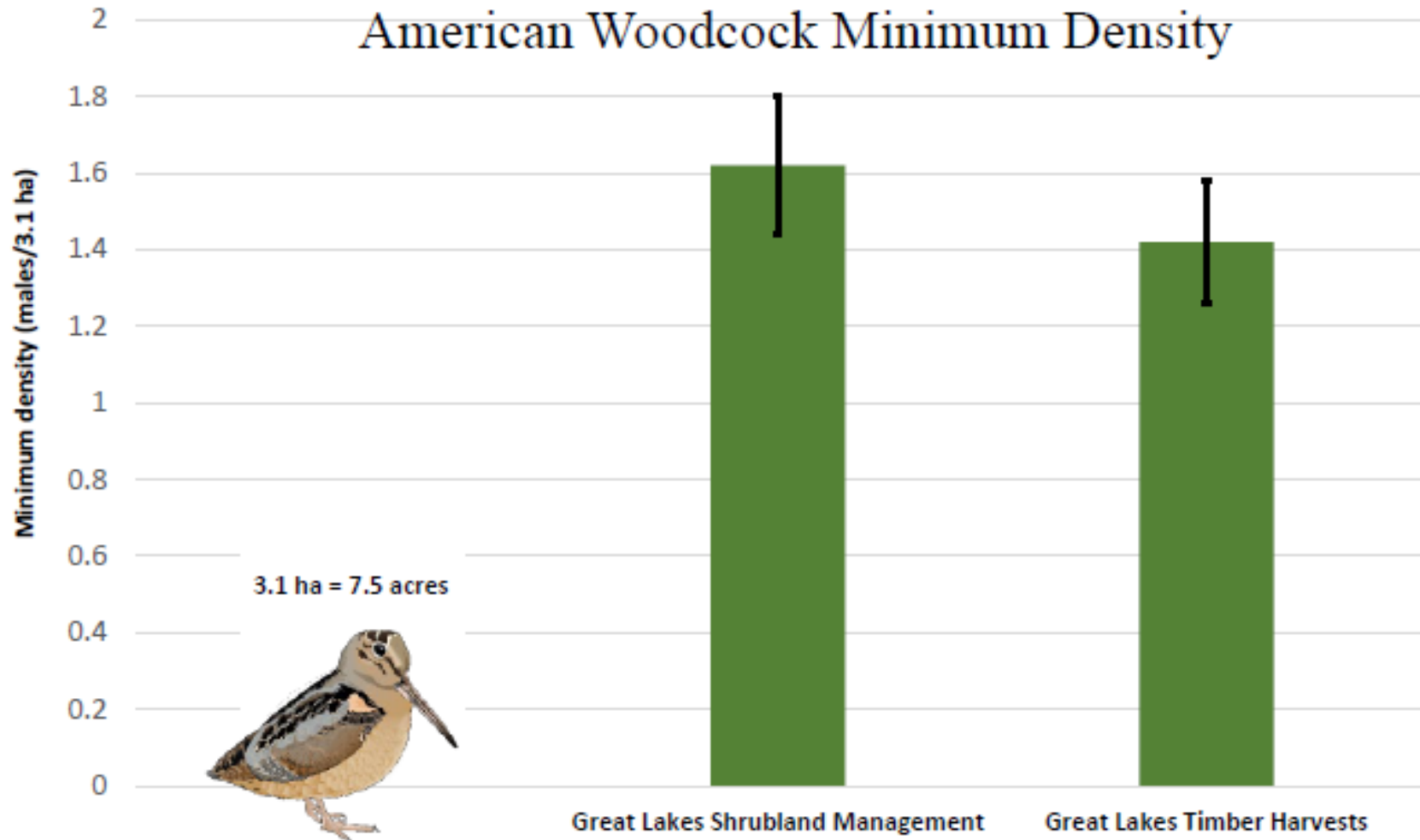


Avian Surveys: GWWA Observations



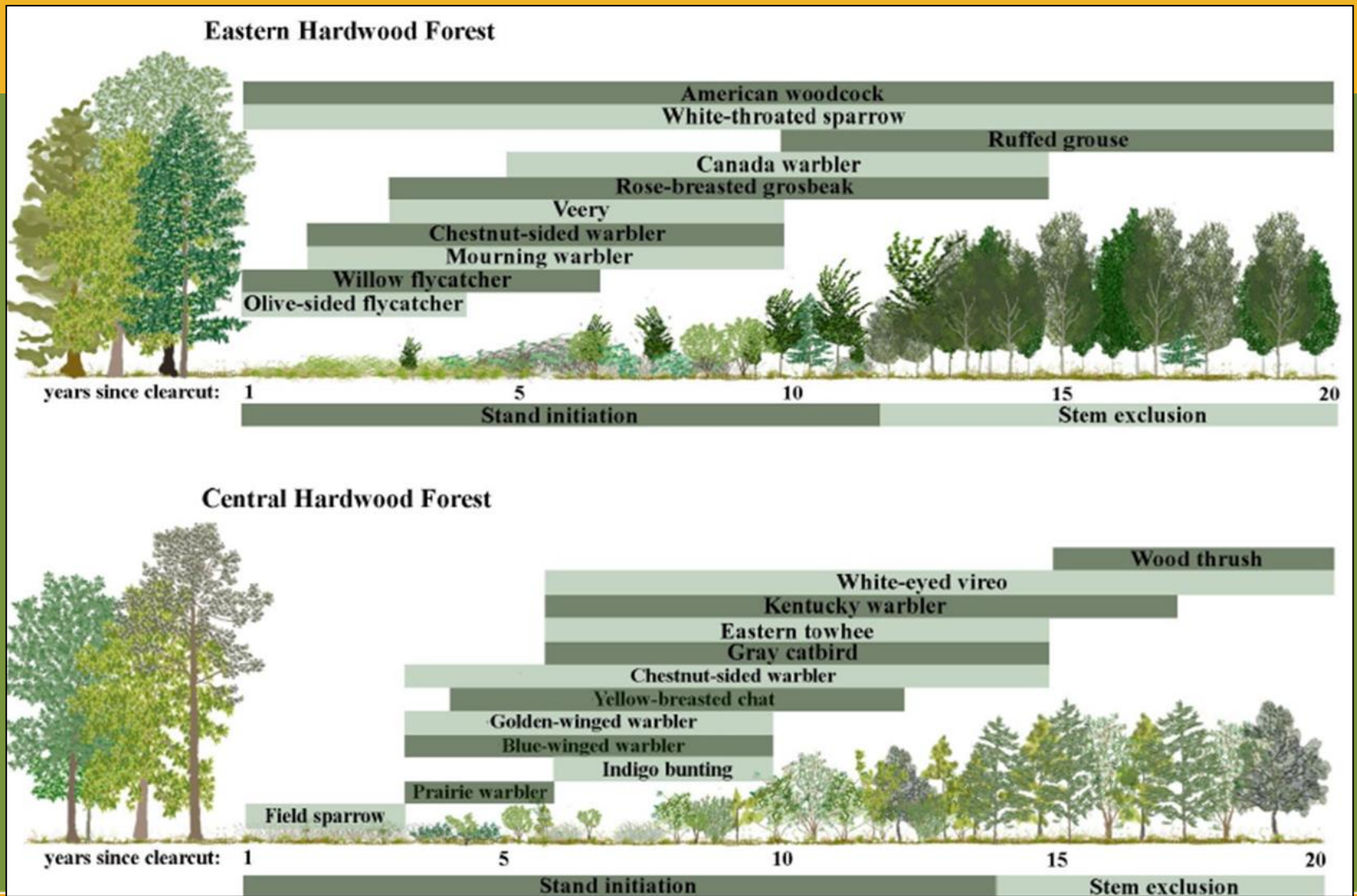
McNeil, D. J., A. D. Rodewald, O. J. Robinson, C. J. Fiss, K. V. Rosenberg, V. Ruiz-Gutierrez, K. R. Aldinger, A. A. Dhondt, S. Petzinger, and J. L. Larkin (2020). Regional abundance and local breeding productivity explain occupancy of restored habitats in a migratory songbird. *Biological Conservation* 245:108463.

Avian Surveys: AMWO Observations



*Jeff Larkin professor of Wildlife Ecology and Conservation presentation of monitoring completed by the Cornell University and Indiana University of Pennsylvania-Research Institute. Findings part of an upcoming publication under peer review.

Post Treatment Songbird Occupation



*MN include a mix of songbird species from both Eastern and Central Hardwood forest types

Promoting Cooperation and Outreach: Minnesota Forest Habitat Collaborative

Vision

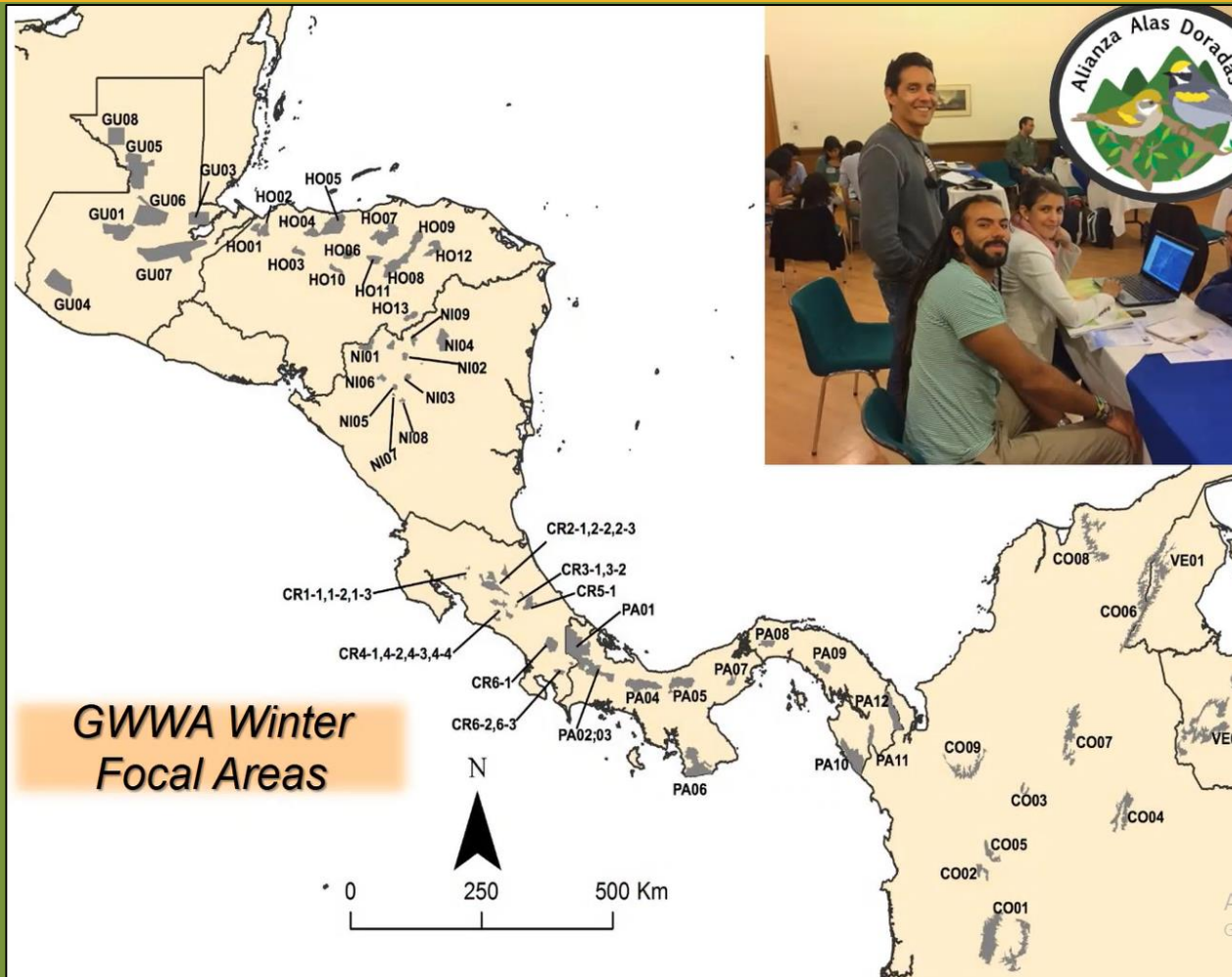
A Minnesota with native, diverse, healthy, productive, connected forest habitats that support and sustain native wildlife populations, as well as local communities.

Mission

Provide a round table community forum to identify, promote, and deliver collaborative conservation, outreach, and research programs that assist natural resource managers across jurisdictional and ownership boundaries to maintain, enhance, and restore MN's forest habitat for the benefit of associated resident and migratory wildlife species.



Work in Minnesota is just one aspect of a full life cycle conservation initiative.



Our conservation goal is to benefit a suite of species and help promote a dynamic mosaic of forest ages and cover types on our MN natural landscape.

